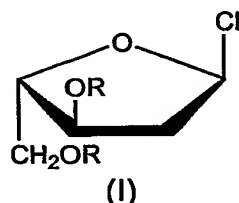


## CLAIMS

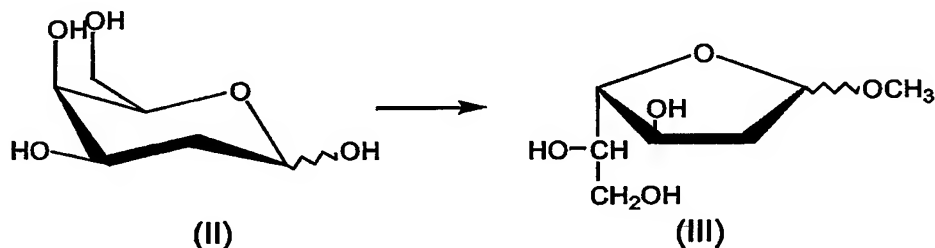
1. Process for the preparation of 1-chloro-3,5-di-O-acyl-deoxy-L-ribofuranosidic derivatives of formula (I)



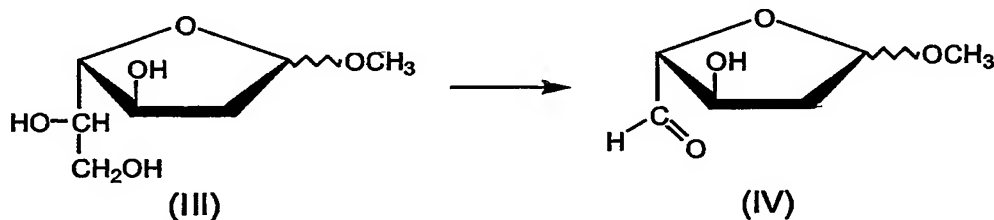
wherein R is an acyl group  $R'CO$ , in which  $R'$  is selected from the group consisting of alkyl groups C1-C6 and aryl groups C7-C13, possibly substituted with one or more substituents;

said process comprising the following steps:

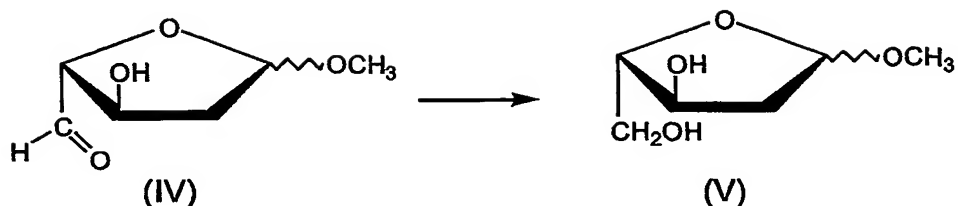
i) reaction of 2-deoxy-D-galactose of formula (II) with methanol in the presence of an acid as catalyst to obtain the 1-O-methyl-2-deoxy-D-galactofuranoside of formula (III):



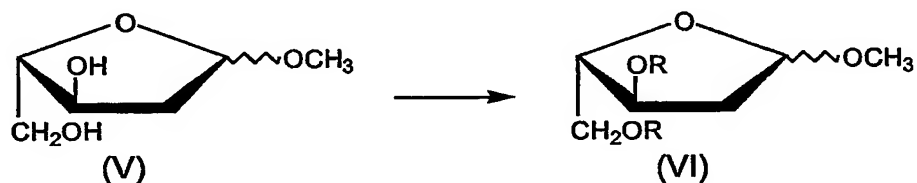
ii) oxidation of 1-O-methyl-2-deoxy-D-galactofuranoside of formula (III) coming from step i) with sodium meta periodate to obtain the corresponding aldehyde of formula (IV):



iii) reduction of the aldehyde of formula (IV) coming from step ii) with sodium borohydride to obtain the 1-O-methyl-2-deoxy-L-ribofuranoside of formula (V):

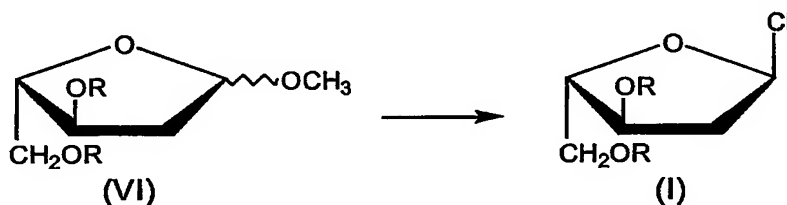


iv) acylation of O-methyl-2-deoxy-L-ribofuranose of formula (V) coming from step iii) with an acyl chloride of formula  $R'COCl$ , in presence of a tertiary amine base in an aprotic solvent to obtain the corresponding 1-O-methyl-3,5-di-O-acyl-2-deoxy-L-ribofuranoside having formula (VI):



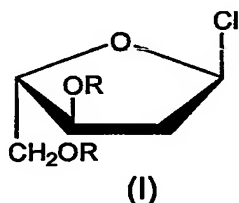
in which  $R'$  and  $R$  are defined as above;

v) chlorination of 1-O-methyl-3,5-di-O-acyl-2-deoxy-L-ribofuranoside of formula (VI) coming from step iv) with gaseous hydrochloric acid at a temperature lower than  $20^{\circ}C$  to obtain 1-chloro-3,5-di-O-acyl-2-deoxy-L-ribofuranoside of formula (I):



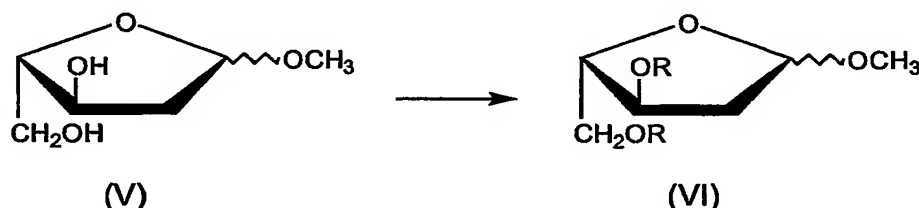
where  $R$  is defined as above.

2. Process for the preparation of 1-chloro-3,5-di-O-acyl-2-deoxy-L-ribofuranoside of formula (I)



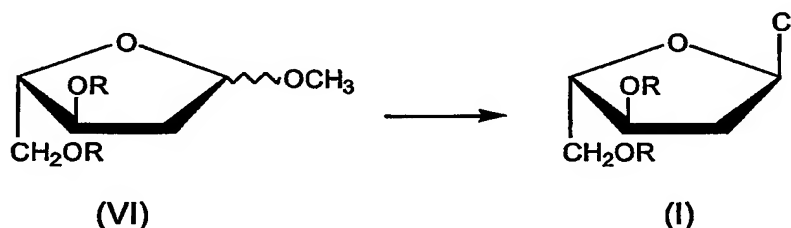
wherein  $R$  is an acyl group  $R'CO$ , wherein  $R'$  is selected from the group consisting of alkyl groups C1-C6 and aryl groups C7-C13, possibly substituted with one or more substituents,  
comprising the following steps:

iv') acylation of 1-O-methyl-2-deoxy-L-ribofuranoside of formula (V) with an acyl chloride of formula  $R'COCl$ , in presence of a tertiary amine base in an aprotic solvent, to obtain the corresponding 1-O-methyl-3,5-di-O-acyl-2-deoxy-L-ribofuranoside having formula (VI):



wherein  $R'$  and  $R$  are defined as above;

v') chlorination of 1-O-methyl-3,5-di-O-acyl-2-deoxy-L-ribofuranoside of formula (VI) coming from step iv') with gaseous hydrochloric acid at a temperature below  $20^{\circ}C$  to obtain the 1-chloro-3,5-di-O-acyl-2-deoxy-L-ribofuranoside of formula (I):



wherein  $R$  is defined as above.

3. Process according to claim 1-2, wherein said substituents are selected from the group consisting of halogens, alkyl groups C1-C4, alkyloxy groups C1-C4 and nitro groups.

4. Process according to claim 1 or 2, wherein  $R'$  is benzoyl.

5. Process according to claim 4, wherein  $R'$  is selected from between *p*-toluoyl and *p*-chloro-benzoyl.

6. Process according to claim 1 or 2, wherein the amount of acyl chloride in step iv) or iv') ranges between 2 and 5 moles compared to the amount of 1-methyl-2-deoxy-L-ribofuranoside of formula (V).

7. Process according to claim 1 or 2, wherein said tertiary amine base in step iv) or iv') is triethylamine.

8. Process according to claim 1 or 2, wherein said aprotic solvent in step iv) or iv') is selected from the group consisting of acetone, acetonitrile, toluene, methylene chloride, tetrahydrofuran, and dimethylformamide.

9. Process according to claim 8, wherein said aprotic solvent is toluene.
10. Process according to claim 1 or 2, wherein said acylation reaction in step iv) or iv') is carried out at a temperature ranging between 0°C and the boiling point of the solvent used.
11. Process according to claim 10, wherein said acylation reaction in step iv) or iv') is carried out at a temperature of 60°C.
12. Process according to claim 1 or 2, wherein said chlorination reaction in step v) or v') is carried out by insufflating gaseous hydrochloric acid in the reaction mixture in presence of acetyl chloride.
13. Process according to claim 1 or 2, wherein said chlorination reaction in step v) or v') is carried out at a temperature below 15°C.
14. Process according to claim 1 or 2, wherein said chlorination reaction in step v) or v') is carried out in a solvent selected from the group consisting of toluene, xylene, isopropyl ether, ethyl ether, chloro-benzene and trichloroethane.
15. Process according to claim 14, wherein said solvent is toluene.
16. Process according to claim 1, wherein said reaction at step i) is carried out with anhydrous methanol in amount ranging between 2 and 20 litres per kilogram of 2-deoxy-galactose of formula (II).
17. Process according to claim 1, wherein in step i) said acid catalyst is obtained *in situ* by hydrolysis of the corresponding acyl chloride.
18. Process according to claim 17, wherein said acid catalyst is obtained *in situ* by hydrolysis of acetyl chloride.
19. Process according to claim 1, wherein said reaction in step i) is carried out maintaining the inner temperature of reaction below 3°C.
20. Process according to claim 1, wherein said reaction in step ii) is carried out using from 1 to 1,5 moles of sodium metaperiodate compared to the compound of formula (III).
21. Process according to claim 1, wherein said reaction in step ii) is carried out at a temperature below 10°C.
22. Process according to claim 1, wherein said reaction in step iii) is carried out in water using from 1/3 to 1 moles of sodium borohydride compared to the compound of formula (IV).

23. Process according to claim 1, wherein said reaction in step ii) is carried out at a temperature below 15°C.